CLAIMS

What is claimed is:

1. A drying apparatus coupled to a water tub comprising:

a condensing duct provided on an outer surface of the water tub, the condensing duct comprising at least one air guide therein to partition an inner space of the condensing duct into a plurality of condensing paths which communicate with each other in series.

2. The drying apparatus according to claim 1, further comprising:

an ultrasonic atomizing unit provided at a predetermined position in the plurality of condensing paths of the condensing duct so as to make fine water particles, thus promoting a condensation of vapor from air flowing through the condensing duct.

3. The drying apparatus according to claim 1, further comprising:

a condensing nozzle provided at a predetermined position in the plurality of condensing paths of the condensing duct so as to spray water, thus promoting a condensation of vapor from air flowing through the condensing duct.

4. The drying apparatus according to claim 1, further comprising:

a water adsorption unit provided at a predetermined position in the plurality of condensing paths so as to adsorb vapor from air flowing through the condensing duct.

5. The drying apparatus according to claim 4, wherein the water adsorption unit is made of a material selected from a group comprising zeolite, alumina and silica.

6. The drying apparatus according to claim 1, wherein the air guide comprises:

a first air guide and a second air guide longitudinally arranged in the condensing duct between both sidewalls of the condensing duct, partitioning the inner space of the condensing duct into a first condensing path, a second condensing path and a third condensing path which communicate with each other in series, with an ultrasonic atomizing unit provided in the first condensing path, a condensing nozzle provided in the second condensing path, and a water adsorption unit provided in the third condensing path.

7. The drying apparatus according to claim 1, wherein the air guide comprises:

a first air guide and a second air guide longitudinally arranged in the condensing duct between both sidewalls of the condensing duct, partitioning the inner space of the condensing duct into a first condensing path, a second condensing path and a third condensing path which communicate with each other in series, with a first condensing nozzle provided in the first condensing path, a second condensing nozzle provided in the second condensing path, and a water adsorption unit provided in the third condensing path.

8. The drying apparatus according to claim 1, further comprising:

a blower duct provided on the outer surface of the water tub to form a closed air circulation circuit, in cooperation with both the water tub and the condensing duct, thus allowing air to pass through the closed air circulation circuit while drying laundry.

9. The drying apparatus according to claim 8, further comprising:

a blower fan and a heater provided in the blower duct to feed dry air of a high temperature into the water tub.

10. A drying apparatus coupled to a water tub comprising:

a condensing duct provided on an outer surface of the water tub; and

an ultrasonic atomizing unit provided in an inlet part of the condensing duct to make fine water particles, thus promoting a condensation of vapor from air flowing through the condensing duct.

11. The drying apparatus according to claim 10, wherein the ultrasonic atomizing unit comprises:

a water container;

a water supply pipe to supply water into the water container; and

an oscillator provided in the water container to produce ultrasonic waves.

12. The drying apparatus according to claim 10, further comprising:

a condensing nozzle provided in an intermediate part of the condensing duct to spray water, thus promoting the condensation of the vapor from the air.

13. The drying apparatus according to claim 10, further comprising:

a water adsorption unit provided in an outlet part the condensing duct to adsorb water from the air which is discharged from the condensing duct

14. A washing machine, comprising:

a water tub; and

a drying apparatus provided on an outer surface of the water tub, the drying apparatus comprising:

a condensing duct provided on a rear surface of the water tub; and

at least one air guide to partition an inner space of the condensing duct into a plurality of condensing paths which communicate with each other in series.

15. The washing machine according to claim 14, wherein the air guide comprises:

a first air guide and a second air guide which are longitudinally arranged in the condensing duct so as to partition the inner space of the condensing duct into a first condensing path, a second condensing path and a third condensing path.

16. The washing machine according to claim 15, wherein the drying apparatus further comprises:

an ultrasonic atomizing unit provided in the first condensing path to make fine water particles, thus condensing vapor from air which passes through the first condensing path.

17. The washing machine according to claim 15, wherein the drying apparatus further comprises:

a condensing nozzle provided in the second condensing path to spray water, thus condensing vapor from air which passes through the second condensing path.

18. The washing machine according to claim 15, wherein the drying apparatus further comprises:

a water adsorption unit provided in the third condensing path to adsorb vapor from air which passes through the third condensing path.

19. The washing machine according to claim 14, wherein the drying apparatus further comprises:

a blower duct provided on the outer surface of the water tub to form a closed air circulation circuit, in cooperation with both the water tub and the condensing duct, so that air to dry laundry passes through the closed air circulation circuit.

20. The washing machine according to claim 19, further comprising:

a blower fan and a heater provided in the blower duct to feed dry air of a high temperature into the water tub.

21. A drying apparatus, comprising:

a condensing duct to condense vapor from air, the condensing duct having an air guide therein.

22. The drying apparatus according to claim 21, wherein an inner space of the condensing duct is partitioned by the air guide into a plurality of condensing paths which communicate with each other in series.

23. A condensing duct of a drying apparatus comprising:

at least one air guide therein partitioning an inner space of the condensing duct into a plurality of condensing paths communicating in series with each other, wherein a first air guide and a second air guide longitudinally arranged in the condensing duct between sidewalls of the condensing duct, partition the inner space of the condensing duct into a first condensing path, a second condensing path and a third condensing path.

24. The condensing duct according to claim 23, wherein an ultrasonic atomizing unit, a condensing nozzle, and a water adsorption unit are provided in the condensing paths.

25. The condensing duct according to claim 23, wherein a first condensing nozzle, a second condensing nozzle, and a water adsorption unit are provided in the condensing paths.